

L Number	Hits	Search Text	DB	Time stamp
-	2	423/155,158,160,161,165,430,432.ccls. and calcium and ((precipitat\$3 near3 "calcium carbonate") or pcc) and channel and (("carbon dioxide") or CO?sub.2) and (("calcium carbonate") or (Ca adj CO?sub.3))	USPAT; US-PGPUB	2003/06/02 12:32
-	35	423/155,158,160,161,165,430,432.ccls. and calcium and ((precipitat\$3 near3 "calcium carbonate") or pcc) and ("continuous" or (semi adj continuous)) and (("carbon dioxide") or CO?sub.2) and (("calcium carbonate") or (Ca adj CO?sub.3))	USPAT; US-PGPUB	2003/06/02 12:34
-	1	("6416727").PN.	USPAT; US-PGPUB	2002/11/18 14:15
-	1	WO-9206038-\$.did.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/11/18 15:52
-	2	WO-9623728-\$.did.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/11/18 15:48
-	2	EP-658606-\$.did.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/11/21 09:43
-	2	EP-892019-\$.did.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/11/21 11:48
-	2	957280.AP,APN.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/11/21 11:49
-	4	052456.AP,APN.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/11/21 11:49
-	22	423/155,158,160,161,165,430,432.ccls. and ((precipitat\$3 near3 "calcium carbonate") or pcc) and (channel or <u>conduit</u> or <u>pipe</u> or (plug adj flow)) and (("carbon dioxide") or CO?sub.2) and (("calcium carbonate") or (Ca adj CO?sub.3))	USPAT; US-PGPUB	2003/06/02 12:59
-	41	423/155,158,160,161,165,430,432.ccls. and ((precipitat\$3 near3 "calcium carbonate") or pcc) and ("continuous" or (semi adj <u>continuous</u> )) and (("carbon dioxide") or CO?sub.2) and (("calcium carbonate") or (Ca adj CO?sub.3))	USPAT; US-PGPUB	2003/06/02 12:35
-	132	((precipitat\$3 near3 (calcium adj carbonate))) and (continuous adj (process or operation)) and ((carbon adj dioxide) or CO?sub.2) and ((calcium adj carbonate) or (Ca adj CO?sub.3))	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/06/03 10:51
-	170	((precipitated near3 (calcium adj carbonate))) and (channel or pipe or conduit) and ((carbon adj dioxide) or CO?sub.2) and ((calcium adj carbonate) or (Ca adj CO?sub.3))	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/06/03 10:53

File 347:JAPIO Oct 1976-1999/Feb. (UPDATED 990603)

(c) 1999 JPO & JAPIO

File 351:DERWENT WPI 1963-1999/UD=9925;UP=9925;UM=9925

(c)1999 Derwent Info Ltd

File 371:French Patents 1961-1999/BOPI 9926

(c) 1999 INPI. All rts. reserv.

?ds

Set	Items	Description
S1	38452	(CALCIUM OR CA OR MONOCALCIUM) () (CARBONATE OR CO3 OR MONOCARBONATE) OR CALCITE OR CaCO3 OR CARBONIC()ACID() (CALCIUM OR -CA) ()SALT OR CHALK
S2	11799	(CALCIUM OR CA) () (HYDROXIDE OR OH2 OR HYDRATE OR DIHYDROXIDE) OR CAO2 OR (HYDRATE? OR SLAKE? OR MILK OR WATER OR H2O) (-N)LIME OR CARBOXYIDE OR HYDRALIME
S3	75742	(CARBON OR C) () (DIOXIDE OR O2 OR OXIDE) OR DRY()ICE OR CARBONIC()ACID() (ANHYDRIDE OR GAS) OR CARBONIC()ANHYDRIDE OR CO2
S4	2785	S1(3N) (PRODUC? OR PROD? ? OR GENERAT? OR MANUF? OR MNFG? OR MFG? OR MFR? OR CREAT? OR FORM?? OR FORMING? OR FORMAT? OR MAKE? ? OR MADE? ? OR MAKING?)
S5	660	S1(3N) (SYNTHESI? OR PREPAR? OR PREP? ? OR PRPN?)
S6	1382	S1(3N) (PRECIPITAT? OR PPT OR PPT? ?)
S7	906	S2(3N) (SUSPENS? OR DISPERS? OR COLLOID? OR EMULS? OR MICRO-EMULS? OR SLURR?)
S8	386	S2(3N)SUSPEN?
S9	6335	S1(10N) (AQ? ? OR AQUEOUS OR WATER OR H2O OR LIQ OR LIQUID? OR SOLUTION? OR SOLN? ?)
S10	971116	MIX OR MIXE? ? OR MIXING OR BLEND? OR ADMIX? OR COMMIX? OR IMMIX? OR INTERMIX? OR DOPE? ? OR DOPING?
S11	11746	S10(3N) (SERIES OR MULTI OR MANY OR SEVERAL OR PLURALITY OR MULTITUD? OR MULTIPLE OR PLURIF? OR GROUP? OR SET OR NETWORK? OR SUCCESSION OR SEQUEN? OR CONSECUTIV?)
S12	131	S4-S5 AND S7-S8 AND S3
S13	20	S12 AND S6
S14	11	S13 AND S9
S15	0	S14 AND S11

?t14/9/all

14/9/1 (Item 1 from file: 347)

DIALOG(R)File 347:JAPIO

(c) 1999 JPO & JAPIO. All rts. reserv.

05694924

#### PRODUCTION OF PRECIPITATED CALCIUM CARBONATE

PUB. NO.: 09-309724 [JP 9309724 A]  
PUBLISHED: December 02, 1997 (19971202)  
INVENTOR(s): SATO TOSHIHARU  
APPLICANT(s): OKUTAMA KOGYO KK [418419] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 08-126009 [JP 96126009]  
FILED: May 21, 1996 (19960521)  
INTL CLASS: [6] C01F-011/18; C08K-003/26; D21H-019/38; D21H-017/67  
JAPIO CLASS: 13.2 (INORGANIC CHEMISTRY -- Inorganic Compounds); 14.2 (ORGANIC CHEMISTRY -- High Polymer Molecular Compounds); 15.3 (FIBERS -- Paper & Pulp)

#### ABSTRACT

PROBLEM TO BE SOLVED: To simply, efficiently and industrially provide **precipitated calcium carbonate** by simplifying operation in a method for controlling particle diameter using a seed crystal.

SOLUTION: An aqueous **suspension of calcium hydroxide** is prepared by adding water to calcium oxide and subjecting calcium oxide to wet slaking and **carbon dioxide** or a **carbon dioxide**-containing gas is blown into the aqueous suspension and calcium oxide is carbonized to produce the

objective precipitated calcium. In this case, at least one kind of water selected from separated water obtained by separation and dehydration treatment of calcium carbonate aqueous slurry produced by carbonizing reaction of aqueous suspension of calcium hydroxide and filtrate obtained by filtration treatment of slurry or water in which the separated water and the filtrate are mixed is used as water for slaking. The water for slaking contains preferably calcium carbonate in 0.05-10g/l concentration and has preferably 0.2-10mS/cm conductivity.

14/9/2 (Item 2 from file: 347)  
DIALOG(R)File 347:JAPIO  
(c) 1999 JPO & JAPIO. All rts. reserv.

03039313

COLORLED PRECIPITATED CALCIUM CARBONATE AND COLORED PAPER

PUB. NO.: 02-014813 [JP 2014813 A]  
PUBLISHED: January 18, 1990 (19900118)  
INVENTOR(s): EBINUMA OSAMU  
YOKOI AKIRA  
SAKAGUCHI KOJI  
APPLICANT(s): OJI PAPER CO LTD [324545] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 63-160734 [JP 88160734]  
FILED: June 30, 1988 (19880630)  
INTL CLASS: [5] C01F-011/18; D21H-017/67  
JAPIO CLASS: 13.2 (INORGANIC CHEMISTRY -- Inorganic Compounds); 15.3 (FIBERS -- Paper & Pulp)  
JOURNAL: Section: C, Section No. 703, Vol. 14, No. 143, Pg. 115, March 19, 1990 (19900319)

#### ABSTRACT

PURPOSE: To reduce color difference between the front and back sides of colored paper by injecting gaseous carbon dioxide into an aqueous slurry containing calcium hydroxide and a water-soluble dye, forming a colored precipitated calcium carbonate and using the resultant colored calcium carbonate as a coloring filler.

CONSTITUTION: Water is added to slake quick lime and the resultant slaked lime is passed through steps for regulating concentration and cleaning to produce calcium hydroxide. A water-soluble dye is then added to form an aqueous slurry. A gas containing gaseous carbon dioxide is then introduced thereto to form a colored precipitated calcium carbonate. The resultant colored precipitated calcium carbonate consisting of colored fine precipitates is subsequently used as a coloring filler to afford colored paper. In the process, since the colored calcium carbonate has extremely high fastness to water, elution into water is hardly caused in forming sheets of paper. Thereby, occurrence of color difference between both the front and the back sides of the colored paper is reduced.

14/9/3 (Item 1 from file: 351)  
DIALOG(R)File 351:DERWENT WPI  
(c)1999 Derwent Info Ltd. All rts. reserv.

011907663 \*\*Image available\*\*

WPI Acc No: 98-324573/199829

XRAM Acc No: C98-099871

Slaked lime manufacture - by passing calcium carbonate in a gas flow through a furnace then contacting with water

Patent Assignee: ECC INT LTD (ENG C )

Inventor: GOLLEY C R L; KOSTUCH J A; PURDEY J A

Number of Countries: 025 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Main IPC	Week
EP 849236	A1	19980624	EP 97310211	A	19971217	C04B-002/10	199829 B
JP 10194734	A	19980728	JP 97353346	A	19971222	C01F-011/02	199840

Priority Applications (No Type Date): GB 9626557 A 19961220

Patent Details:

Patent	Kind	Lan	Pg	Filing Notes	Application	Patent
EP 849236	A1	E	7			

Designated States (Regional): AL AT BE CH DE DK ES FI FR GB GR IE IT LI  
LT LU LV MC MK NL PT RO SE SI

JP 10194734 A 6

Abstract (Basic): EP 849236 A

Gas flow containing calcium carbonate particles is passed through a calcining furnace to thermally decompose the CaCO<sub>3</sub> and the resulting calcium oxide particles suspended in **carbon dioxide** are supplied to a vessel and contacted with water to obtain an aqueous **calcium hydroxide suspension** followed by it's separation from the gas.

USE - **Aqueous** Ca(OH)<sub>2</sub> suspension obtained is used in **precipitated CaCO<sub>3</sub> manufacture** by reacting with CO<sub>2</sub>. The CaCO<sub>3</sub> has utility in paper making, fillers, pigments, paints and polymers.

ADVANTAGE - Product is grit free and process can be continuous. Dry CaO handling is avoided. Product suspensions are flowable and pumpable.

Dwg.1/1

Title Terms: SLAKE; LIME; MANUFACTURE; PASS; CALCIUM; CARBONATE; GAS; FLOW; THROUGH; FURNACE; CONTACT; WATER

Derwent Class: A60; E33; F09; G01

International Patent Class (Main): C01F-011/02; C04B-002/10

International Patent Class (Additional): C01F-011/06

File Segment: CPI

Manual Codes (CPI/A-N): A08-E02; A08-R; E34-D01; F05-A06D; G01-A01;

G02-A03D

Chemical Fragment Codes (M3):

\*01\* A220 A940 C101 C108 C550 C730 C801 C802 C804 C805 C807 M411 M720  
M903 M904 M910 N243 N362 N511 N512 N513 N514 N515 Q130 Q324 Q333  
Q606 R024 R01502-P

Polymer Indexing (PS):

<01>

\*001\* 018; P0000

\*002\* 018; ND01; Q9999 Q7158-R Q7114; K9449

\*003\* 018; R01278 D00 F44 C- 4A O- 6A Ca 2A; A999 A759; A999 A237; N9999  
N6177-R; S9999 S1456-R; N9999 N6848 N6655; A999 A102 A077

Derwent Registry Numbers: 1066-S; 1278-S; 1502-P

Specific Compound Numbers: R01502-P

14/9/4 (Item 2 from file: 351)

DIALOG(R)File 351:DERWENT WPI

(c)1999 Derwent Info Ltd. All rts. reserv.

009581144

WPI Acc No: 93-274690/199335

XRAM Acc No: C93-122487

**Pure** calcium carbonate prodn. from **impure** calcium oxide source, for **crystals - by slaking source**, adding water soluble anions, and carbon dioxide, and **sepg. ppte.**, for **pharmaceutical filler, tooth paste, paper coating and white paint**

Patent Assignee: PRETORIA PORTLAND CEMENT CO LTD (PRET-N)

Inventor: FOUCHE P M

Number of Countries: 007 Number of Patents: 005

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Main IPC	Week
EP 558275	A1	19930901	EP 93301327	A	19930223	C01F-011/18	199335 B
CA 2090088	A	19930827	CA 2090088	A	19930222	C01F-011/18	199346
ZA 9301376	A	19931124	ZA 931376	A	19930226	C01F-000/00	199402
US 5376343	A	19941227	US 9323624	A	19930226	C01F-005/24	199506

Priority Applications (No Type Date): ZA 921408 A 19920226

Cited Patents: 2.Jnl.Ref; EP 197327; FR 2261227; GB 1049815; JP 1261225; JP 61219716; US 3320026

Patent Details:

Patent	Kind	Lan	Pg	Filing	Notes	Application	Patent
EP 558275	A1	E	7				

Designated States (Regional): DE FR GB IT

ZA 9301376 A 21

US 5376343 A 5

Abstract (Basic): EP 558275 A

The CaO is slaked in H<sub>2</sub>O to obtain an aq. **hydrated lime slurry** (I). A source of H<sub>2</sub>O soluble anions (II) salt (III) formable with Ca(++) ions is added to (I) and the slurry solid/liq. sepd. to obtain a solids free soln. (IV) contg. Ca(++) ions and anions (II). Salt (III) has a dissociation constant greater c.f. that of Ca(OH)<sub>2</sub>. Soln. (IV) is treated with CO<sub>2</sub> gas at rates to maintain a controlled temp. and lower soln. pH to a point where crystalline **CaCO<sub>3</sub> prod.** is **pptd**. predominately as **calcite**, vaterite or aragonite. Solid prod. is sepd. from mother liquor.

USE/ADVANTAGE - High purity prod. is obtd. from impure source material. Prod. is used in mfg. white paint, tooth pastes, paper coatings and in pharmaceutical fillers.

Dwg.0/0

Abstract (Equivalent): US 5376343 A

**Prodn.** of purified **CaCO<sub>3</sub>** from impure CaO comprises slaking with **water** to form aq. **hydrated lime slurry** and addn. soluble source of anions forming Ca salt with dissociation constant above that of Ca(OH)<sub>2</sub>, sepn. solids to obtain solid-free soln. of Ca ions and anions than intimately contacting liq. with CO<sub>2</sub> below 50 micron bubbles at rate to maintain suitable temp. and lower pH to pre-set value to **ppte. CaCO<sub>3</sub>** in reqd. crystalline **form**, viz. **calcite**, vaterite or aragonite., and sepn..

Pref. anions are NH<sub>4</sub>, pref. CaO is calcite or dolomite lime from calcination of limestone in industrial kiln. Phase sepn. is by pressure filtration through 0.01-0.5 micron tubular filter. An anti-caking flocculation aid during CO<sub>2</sub> bubbling comprises 0.1% v/v organic fatty acid. (stearic acid in ethanol).

USE - Pure Ca and Mg carbonates in specific crystalline form are used in paint, toothpaste, paper coating, fillers and pharmaceuticals.

Dwg.0/0

Title Terms: PURE; CALCIUM; CARBONATE; PRODUCE; IMPURE; CALCIUM; OXIDE; SOURCE; CRYSTAL; SLAKE; SOURCE; ADD; WATER; SOLUBLE; ANION; CARBON; DI; OXIDE; SEPARATE; PRECIPITATION; PHARMACEUTICAL; FILL; TOOTH; PASTE; PAPER; COATING; WHITE; PAINT

Derwent Class: B07; D21; E33; F09; G01

International Patent Class (Main): C01F-011/18

International Patent Class (Additional): C01F-005/24

File Segment: CPI

Manual Codes (CPI/A-N): B05-A01A; B05-C04; D08-B08; E34-D03; F05-A06B; G01-A01; G02-A03; G02-A05C

Chemical Fragment Codes (M2):

\*01\* A220 A940 C106 C108 C530 C730 C801 C802 C803 C805 C807 M411 M720 M903 M904 M910 N164 N200 P911 Q324 Q332 R01278-P

Chemical Fragment Codes (M3):

\*01\* A220 A940 C106 C108 C530 C730 C801 C802 C803 C805 C807 M411 M720 M903 M904 M910 N164 N200 P911 Q324 Q332 R01278-P

Derwent Registry Numbers: 1278-P; 1503-S; 1648-U; 1947-U

Specific Compound Numbers: R01278-P

14/9/5 (Item 3 from file: 351)

DIALOG(R) File 351:DERWENT WPI

(c)1999 Derwent Info Ltd. All rts. reserv.

008979964

WPI Acc No: 92-107233/199214

XRAM Acc No: C92-049917

**Pptd. calcium carbonate prepn. useful as filler or pigment -  
comprises slaking quicklime in aq. medium, passing suspension through  
sieve, subjecting to high energy and shear agitation, etc**

Patent Assignee: ECC INT LTD (ENGC )

Inventor: BLEAKLEY I S; JONES T R

Number of Countries: 023 Number of Patents: 019

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Main IPC	Week
GB 2248229	A	19920401	GB 90121072	A	19900927		199214 B
EP 480587	A	19920415	EP 91308433	A	19910916		199216
WO 9206038	A	19920416	WO 91GB1530	A	19910906		199218
AU 9185262	A	19920428	AU 9185262	A	19910906	C01F-011/18	199232
			WO 91GB1530	A	19910906		
NZ 239759	A	19921125	NZ 239759	A	19910911	C01F-011/18	199305
FI 9300143	A	19930114	WO 91GB1530	A	19910906	C01F-000/00	199314
			FI 93143	A	19930114		
NO 9300045	A	19930107	WO 91GB1530	A	19910906	C01F-011/18	199317
			NO 9345	A	19930107		
EP 480587	A3	19920422	EP 91308433	A	19910916		199329
BR 9106753	A	19930629	BR 916753	A	19910906	C01F-011/18	199330
			WO 91GB1530	A	19910906		
JP 6501235	W	19940210	JP 91515528	A	19910906	C01F-011/18	199411
			WO 91GB1530	A	19910906		
AU 649721	B	19940602	AU 9185262	A	19910906	C01F-011/18	199427
US 5342600	A	19940830	US 91767039	A	19910926	C01F-011/18	199434
			US 92974955	A	19921113		
GB 2248229	B	19941026	GB 9021072	A	19900927	C01F-011/18	199440
EP 480587	B1	19941117	EP 91308433	A	19910916	C01F-011/18	199444
DE 69105183	E	19941222	DE 605183	A	19910916	C01F-011/18	199505
			EP 91308433	A	19910916		
ES 2064047	T3	19950116	EP 91308433	A	19910916	C01F-011/18	199509
NO 303219	B1	19980615	WO 91GB1530	A	19910906	C01F-011/18	199830
			NO 9345	A	19930107		
CA 2087857	C	19981103	CA 2087857	A	19910906	C01F-011/18	199903
JP 2857806	B2	19990217	JP 91515528	A	19910906	C01F-011/18	199912
			WO 91GB1530	A	19910906		

Priority Applications (No Type Date): GB 90121072 A 19900927; GB 9021072 A 19900927

Cited Patents: No-SR.Pub; 1.Jnl.Ref; DE 1592147; EP 140644; JP 62113718; US 2964382; US 3920800

Patent Details:

Patent	Kind	Lan	Pg	Filing Notes	Application	Patent
GB 2248229	A		21			
EP 480587	A	E	8			
Designated States (Regional): AT BE CH DE DK ES FR GR IT LI LU NL SE						
WO 9206038	A	E	21			
Designated States (National): AU BR CA FI JP KR NO						
AU 9185262	A			Based on		WO 9206038
BR 9106753	A			Based on		WO 9206038
JP 6501235	W		7	Based on		WO 9206038
AU 649721	B			Previous Publ.		AU 9185262
				Based on		WO 9206038
US 5342600	A		6	CIP of	US 91767039	
EP 480587	B1	E	87			
Designated States (Regional): AT BE CH DE DK ES FR GR IT LI LU NL SE						
DE 69105183	E			Based on		EP 480587
ES 2064047	T3			Based on		EP 480587
NO 303219	B1			Previous Publ.		NO 9300045
JP 2857806	B2		5	Previous Publ.		JP 6501235
				Based on		WO 9206038

Abstract (Basic): GB 2248229 A

**Preparing pptd. CaCO<sub>3</sub>** comprises (a) slaking quicklime in an **aq** . medium, (b) passing the suspension through a sieve having an aperture size of 40-70 microns, (c) converting the Ca(OH)<sub>2</sub> into a finely dispersed condition by subjecting the suspension passed through the sieve to high energy, high shear agitation, (d) carbonating the suspension of finely dispersed slaked lime formed in (c) by passing through it a gas contg. **CO<sub>2</sub>** in an amt. sufficient to cause the pH of the suspension to fall to substantially neutral, and (e) sepg. the **pptd. CaCO<sub>3</sub> formed from the aq. suspension medium.**

Quicklime is added to the **aq. medium** in order to produce after step (a) a suspension with a Ca(OH)<sub>2</sub> concn. of 0.7-4M (5-30% wt./vol); the temp. is maintained at 30-50 deg.C and the **aq. medium** is continuously agitated during step (a). The carbonating gas contains 5-50% vol of **CO<sub>2</sub>** , remaining being air or nitrogen, is admitted into the suspension in the form of fine bubbles at a rate of 0.02-0.10 moles of **CO<sub>2</sub>** per min per mole of Ca(OH)<sub>2</sub>.

USE/ADVANTAGE - The process **produces** a **CaCO<sub>3</sub>** bulk pigment cheaper than aggregated kaolin but having as effective light scattering properties. The **CaCO<sub>3</sub> obtd.** is esp. suitable as a filler in papermaking or as pigment in a paper coating compsn.

Dwg.0/0

Abstract (Equivalent): EP 480587 B

A process of **preparing precipitated calcium carbonate** comprising the following steps: (a) slaking quicklime in an **aqueous medium**, so as to produce a **suspension of calcium hydroxide**; (b) passing the **suspension of calcium hydroxide** through a sieve having an aperture size in the range from 40 to 70 microns; (c) converting the **calcium hydroxide** into a finely **dispersed** condition by subjecting the suspension to high energy, high shear agitation; (d) carbonating the finely **dispersed slaked lime** of the **suspension** formed in step (c) by passing therethrough sufficient of a gas comprising **carbon dioxide** to cause the pH of the suspension to fall to substantially neutral; and (e) separating the **precipitated calcium carbonate formed** in step (d) from the **aqueous medium** in which it is suspended; characterised in that said high energy, high shear agitation is terminated prior to said carbonation of step (d), and that said suspension is subjected to substantially continuous agitation during said carbonation of step (d).

Dwg.0/0

Abstract (Equivalent): GB 2248229 B

A process of **preparing precipitated calcium carbonate** comprising the following steps: a) slaking quicklime in an **aqueous medium**, so as to produce a **suspension of calcium hydroxide**; b) passing the **suspension of calcium hydroxide** through a sieve having an aperture size in the range from 40 to 70 microns; c) converting the **calcium hydroxide** into a finely **dispersed** condition by subjecting the suspension to high energy, high shear agitation; d) carbonating the finely **dispersed slaked lime** of the **suspension** formed in step (c) by passing therethrough sufficient of a gas comprising **carbon dioxide** to cause the pH of the suspension to fall to substantially neutral; and e) separating the **precipitated calcium carbonate formed** in step (d) from the **aqueous medium** in which it is suspended; characterised in that said high energy, high shear agitation is terminated prior to said carbonation of step (d), and that said suspension is subjected to substantially continuous agitation, of substantially lower energy than in step (c), during said carbonation of step (d).

Dwg.0/0

Abstract (Equivalent): US 5342600 A

**Precipitated CaCO<sub>3</sub>** is **prepd.** by (A) slaking CaO in **aq.** medium with continuous agitation, (B) passing the suspension of Ca(OH)<sub>2</sub> obtd. through a sieve of aperture 40-70 microns, (C) subjecting the passed suspension to high energy, high shear agitation using an impeller operating at a peripheral speed of 40-70 m/sec to obtain a finely dispersed Ca(OH)<sub>2</sub> suspension, (D) passing sufficient **CO<sub>2</sub>** contg. gas into the suspension to cause the pH to fall to neutral,

pref. ta a rate of 0.02-0.10 mol. CO<sub>2</sub> per mol. Ca(OH)<sub>2</sub> with continuous agitation using an impeller operating at a peripheral speed of 200-700 cm/sec. to cause a lower energy agitation and lower shear than in (B) and (E) sepg. the CaCO<sub>3</sub> obtd. from the aq. medium.

The initial suspension pref. contains 5-30g Ca(OH)<sub>2</sub> per 100 ml. aq. medium. The temp. in (A) is 30-50 deg. C. The carbonating gas contains 5-50 vol.% CO<sub>2</sub> in air or N<sub>2</sub>.

USE/ADVANTAGE - Esp. as filler in paper making or as pigment in a paper coating compsn. The CaCO<sub>3</sub> has a light scattering effect at least equal to that of aggregated kaolin pigment but is cheaper.

Dwg.0/0

Title Terms: PRECIPITATION; CALCIUM; CARBONATE; PREPARATION; USEFUL; FILL; PIGMENT; COMPRISE; SLAKE; QUICKLIME; AQUEOUS; MEDIUM; PASS; SUSPENSION; THROUGH; SIEVE; SUBJECT; HIGH; ENERGY; SHEAR; AGITATE

Index Terms/Additional Words: PAPER; MAKING

Derwent Class: E33; F09; G01; G02

International Patent Class (Main): C01F-000/00; C01F-011/18

International Patent Class (Additional): C04B-002/06; D21H-017/67; D21H-019/38

File Segment: CPI

Manual Codes (CPI/A-N): E34-D03; F05-A06B; F05-A06D; G02-A05C

Chemical Fragment Codes (M3):

\*01\* A220 A940 C106 C108 C530 C730 C801 C802 C803 C805 C807 M411 M720

M903 M904 M910 Q324 Q333 Q606 R01278-P

Derwent Registry Numbers: 1278-P; 1423-S; 1502-S

Specific Compound Numbers: R01278-P

14/9/6 (Item 4 from file: 351)

DIALOG(R)File 351:DERWENT WPI

(c)1999 Derwent Info Ltd. All rts. reserv.

008907172

WPI Acc No: 92-034441/199205

XRAM Acc No: C92-014988

Calcium carbonate prepn. - by carbonating slaked quicklime with  
addn. of active hydrogen reagent which improves light scattering  
properties

Patent Assignee: ECC INT LTD (ENGC )

Inventor: BLEAKLEY I S; JONES' T R

Number of Countries: 024 Number of Patents: 019

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Main IPC	Week
EP 468719	A	19920129					199205 B
GB 2246344	A	19920129	GB 9016552	A	19900727		199205
WO 9202457	A	19920220					199210
AU 9182929	A	19920302	AU 9182929	A	19910722	C01F-011/18	199224
			WO 91GB1225	A	19910722		
FI 9201344	A	19920327	WO 91GB1225	A	19910722	C01F	199225
			FI 921344	A	19920327		
NO 9201183	A	19920515	WO 91GB1225	A	19910722	C01F-011/00	199232
			NO 921183	A	19920326		
BR 9105823	A	19920825	BR 915823	A	19910722	C01F-011/18	199239
			WO 91GB1225	A	19910722		
NZ 239103	A	19921125	NZ 239103	A	19910724	C01F-011/18	199305
AU 632706	B	19930107	AU 9182929	A	19910722	C01F-011/18	199308
JP 5501702	W	19930402	JP 91512822	A	19910722	C01F-011/18	199318
			WO 91GB1225	A	19910722		
US 5232678	A	19930803	US 91736488	A	19910726	C01B-031/24	199332
TW 215074	A	19931021	TW 91105861	A	19910727	C01F-011/18	199402
EP 468719	B1	19941005	EP 91306638	A	19910722	C01F-011/18	199438
DE 69104436	E	19941110	DE 604436	A	19910722	C01F-011/18	199444
			EP 91306638	A	19910722		
ES 2061184	T3	19941201	EP 91306638	A	19910722	C01F-011/18	199504
US 5558850	A	19960924	US 91736488	A	19910726	C01F-011/18	199644
			US 92996677	A	19921224		



			US 94287966	A	19940809	
NO 302516	B1	19980316	WO 91GB1225	A	19910722	C01F-011/18 199818
			NO 921183	A	19920326	
FI 101217	B1	19980515	WO 91GB1225	A	19910722	C01F-011/18 199826
			FI 921344	A	19920327	
CA 2066655	C	19980519	CA 2066655	A	19910722	C01F-011/18 199831

Priority Applications (No Type Date): GB 9016552 A 19900727

Cited Patents: 3.Jnl.Ref; DE 3619909; DE 3620024; JP 48017438; US 3347624

Patent Details:

Patent	Kind	Lan	Pg	Filing	Notes	Application	Patent
--------	------	-----	----	--------	-------	-------------	--------

EP 468719	A		9				
-----------	---	--	---	--	--	--	--

Designated States (Regional): AT BE CH DE ES FR GB GR IT LI LU NL SE

WO 9202457	A						
------------	---	--	--	--	--	--	--

Designated States (National): AU BR CA FI JP KR NO

AU 9182929	A			Based on		WO 9202457
------------	---	--	--	----------	--	------------

BR 9105823	A			Based on		WO 9202457
------------	---	--	--	----------	--	------------

AU 632706	B			Previous Publ.		AU 9182929
-----------	---	--	--	----------------	--	------------

				Based on		WO 9202457
--	--	--	--	----------	--	------------

JP 5501702	W		7	Based on		WO 9202457
------------	---	--	---	----------	--	------------

US 5232678	A		5			
------------	---	--	---	--	--	--

EP 468719	B1	E	11			
-----------	----	---	----	--	--	--

Designated States (Regional): AT BE CH DE DK ES FR GB GR IT LI LU NL SE

DE 69104436	E			Based on		EP 468719
-------------	---	--	--	----------	--	-----------

ES 2061184	T3			Based on		EP 468719
------------	----	--	--	----------	--	-----------

US 5558850	A		6	CIP of	US 91736488	
------------	---	--	---	--------	-------------	--

				CIP of	US 92996677	
--	--	--	--	--------	-------------	--

				CIP of		US 5232678
--	--	--	--	--------	--	------------

NO 302516	B1			Previous Publ.		NO 9201183
-----------	----	--	--	----------------	--	------------

FI 101217	B1			Previous Publ.		FI 9201344
-----------	----	--	--	----------------	--	------------

Abstract (Basic): EP 468719 A

**Prepn . of calcium carbonate** comprises: a) slaking quicklime in an **aq .** medium so the  $\text{Ca(OH)}_2$  conc. is 0.7-4 M; b) carbonating the suspension formed in a) by bubbling through a **CO<sub>2</sub> -contg.** gas until the pH is neutral; c) sepg. **pptd .  $\text{CaCO}_3$  - $\text{CaCO}_3$**  from the **aq .** medium pref. by filtration. 0.01-15 wt.% of a reagent with a min. of one active H, or a salt is added to the slaking soln.. Reaction temp. is maintained at 30-50 deg. C and continuously stirred.

**USE -  $\text{CaCO}_3$  prepd .** is a suitable bulking pigment for paper-making and is at least as effective in light scattering as an aggregated kaolin pigment but less expensive. Active-H reagent is to inhibit the formation of aggregates so the suspension comprises fine discrete particles of slaked lime which yield **pptd .  $\text{CaCO}_3$**  with good light scattering properties. Active-H reagentm pref. comprises a polybasic acid, a protein or a cpd. or formula  $\text{R1-NR3-R2}$  I: where R1 and R2 each = H, 1-8C hydrocarbon radical, a radical or formula -  $(\text{CH}_2)_p\text{-COOM1}$ , (II) where p = 1-4, M1 = H, alkali metal or ammonium or radical of formula -  $(\text{CH}_2)_q\text{-OX}$  (III) where q = 2-5 and X = H or 1-8C hydrocarbon radical; R3 = 1-8C hydrocarbon radical or radical of formula -  $(\text{CH}_2)_p\text{-COOM1}$ . (9pp Dwg.No.0/0

Abstract (Equivalent): EP 468719 B

A process of **preparing calcium carbonate**, which comprises the following steps: (a) slaking quicklime in an **aqueous** medium; (b) carbonating the **suspension of slaked lime** formed in step (a) by passing therethrough sufficient of a gas comprising **carbon dioxide** to cause the pH of the suspension to fall to substantially neutral; and (c) separating the **precipitated calcium carbonate formed** in step (b) from the **aqueous** medium in which it is suspended; characterised in that prior to said slaking, there is added to said aqueous medium in which the quicklime is to be staked, 0.01% to 15%, based on the weight of dry calcium oxide, of a reagent having one or more active hydrogen atoms, or a salt thereof.

Dwg.0/0

Abstract (Equivalent): US 5558850 A

A process for **preparing calcium carbonate** comprises: (a) slaking quicklime in an **aqueous** medium;

(b) carbonating the **suspension** of **slaked lime** formed in step (a) by passing through it sufficient of a gas comprising **carbon dioxide** to cause the pH of the suspension to fall to neutral; and (c) separating the **precipitated calcium carbonate** formed in step (b) from the **aqueous** medium in which it is suspended.

The improvement comprises adding a reagent comprising a polyhydric alcohol or a polyhydric phenol to the aqueous medium in which the quicklime is slaked in step (a).

Dwg.0/0

US 5232678 A

Prepn. of clusters of scolenohehdral CaCO<sub>3</sub> comprises: (a) adding a reagent having one or more H atoms which dissociate on addn. or a salt to an aq. medium; (b) slaking quicklime in the aq. medium; (c) carbonating the slaked lime suspension by passing a sufficient amt. of CO<sub>2</sub> -contg. gas through suspension so that pH becomes neutral; and (d) sepg. the **pptd . CaCO<sub>3</sub>** from **aq .** medium. The reagent is selected from triethanolamine, mannitol, diethanolamine, bicine, morpholine, trispropanol-amine, N-ethyl diethanolamine, N,N-diethylethanolamine and sodium boroheptonate. The reagent is used in an amt. of 1 wt. %.

USE/ADVANTAGE - Used as paper filter or paper coating pigment having good light scattering properties. The carbonate is more economical than conventional kaolin pigmen

Dwg.0/0

Title Terms: CALCIUM; CARBONATE; PREPARATION; CARBONATED; SLAKE; QUICKLIME;

ADD; ACTIVE; HYDROGEN; REAGENT; IMPROVE; LIGHT; SCATTERING; PROPERTIES

Derwent Class: E33; F09; G01

International Patent Class (Main): C01B-031/24; C01F-011/00; C01F-011/18; C01F-015/52

International Patent Class (Additional): C04B-002/04; C04B-002/06;

D21H-017/64; D21H-017/66; D21H-017/67; D21H-017/73; D21H-017/74;

D21H-019/38

File Segment: CPI

Manual Codes (CPI/A-N): E10-B02E; E10-B03B; E10-B04D; E34-D03; F05-A06D;

G01-A01

Chemical Fragment Codes (M3):

\*01\* A220 A940 C106 C108 C530 C730 C801 C802 C803 C805 C807 M411 M720 M903 M904 M910 N513 Q324 Q333 R01278-P

\*02\* H1 H100 H102 H103 H181 H182 H401 H402 H403 H481 H482 H483 H581 H582 H583 J011 J012 J013 J014 J171 J172 J173 M210 M211 M212 M213 M214 M215 M216 M220 M221 M222 M231 M232 M233 M273 M280 M281 M282 M283 M311 M312 M313 M314 M315 M321 M322 M323 M332 M342 M349 M381 M383 M391 M392 M393 M416 M620 M781 M903 M904 Q324 9205-B0801-U 9205-B0802-U

\*03\* H4 H402 H403 H404 H405 H482 H483 H484 H8 M280 M312 M313 M314 M315 M316 M321 M331 M332 M333 M334 M342 M343 M344 M383 M391 M416 M620 M781 M903 M904 Q324 9205-B0803-U

Derwent Registry Numbers: 0743-U; 1278-P

Specific Compound Numbers: R01278-P

Generic Compound Numbers: 9205-B0801-U; 9205-B0802-U; 9205-B0803-U

14/9/7 (Item 5 from file: 351)

DIALOG(R) File 351:DERWENT WPI

(c)1999 Derwent Info Ltd. All rts. reserv.

008655216

WPI Acc No: 91-159243/199122

XRAM Acc No: C91-068687

**Coloured calcium carbonate prodn. - by bubbling carbon dioxide gas through aq. slurry contg. dispersed calcium hydroxide useful as filler for neutral paper**

Patent Assignee: OJI PAPER CO (OJIP ); NEW OJI PAPER CO LTD (OJIP )

Inventor: EBINUMA O; SAITOH Y; SAKAGUCHI T; YOKOI A

Number of Countries: 003 Number of Patents: 005

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Main IPC	Week
-----------	------	------	-------------	------	------	----------	------

JP 3093618	A	19910418	JP 89227488	A	19890904	199122 B
US 5120521	A	19920609			C01F-011/18	199226 N
CA 2034190	A	19920716	CA 2034190	A	19910115 C09C-001/02	199240 N
JP 96029936	B2	19960327	JP 89227488	A	19890904 C01F-011/18	199617
CA 2034190	C	19981201	CA 2034190	A	19910115 C09C-001/02	199907 N

Priority Applications (No Type Date): JP 89227488 A 19890904; CA 2034190 A 19910115

Patent Details:

Patent	Kind	Lan	Pg	Filing Notes	Application	Patent
JP 3093618	A		5			
US 5120521	A		8			
JP 96029936	B2		4	Previous Publ.		JP 3093618

Abstract (Basic): JP 3093618 A

**CO<sub>2</sub>** gas is bubbled through aq. **slurry** contg. **dispersed Ca hydroxide**. Aq. dye is dissolved into the slurry and reaction for **Ca carbonate formation** is finished at slurry pH higher than 8.5.

USE/ADVANTAGE - For mfg. coloured **Ca carbonate**, which fixes dye with sufficient strength to be used as coloured filler for paper, of which colour tint does not differ on both sides. The prod. has high water resistance and the dye carried by it does not desorb or attach to pulp on contact. If the distribution of coloured filler were inhomogeneous in a paper, difference of colour tint between the both sides would be very small. Desorption of dye from the filler or pulp can be made very small, so that the chromaticity of the waste water can be reduced. (5pp Dwg.No.0/0)

Abstract (Equivalent): US 5120521 A

Prod. comprises; (a) mixing calcium hydroxide with a water soluble coloured dye in water to prepare a coloured aq. slurry; (b) introducing a gas contg. **carbon dioxide** into the **slurry** to convert the **calcium hydroxide** to a coloured **calcium carbonate** and ppte **calcium carbonate**; and (c) collecting the coloured **pptd calcium carbonate** from the aq. slurry at a pH of 8.2 or more. Dyes are pref. direct dyes at a pref. pH of 8.5-10.5. Concns of calcium hydroxide is pref. 50-200g/l and pref. feeding at 10-80deg.C. Introduction of **carbon dioxide** contg. gas is at pref. 10-80deg.C. pH of aq. slurry is pref. 8.5-10.5.

USE/ADVANTAGE - Uniformly coloured paper sheet on both sides. Has strong colour fastness.

Dwg.0/0

Title Terms: COLOUR; CALCIUM; CARBONATE; PRODUCE; BUBBLE; CARBON; DI; OXIDE; GAS; THROUGH; AQUEOUS; SLURRY; CONTAIN; DISPERSE; CALCIUM; HYDROXIDE; USEFUL; FILL; NEUTRAL; PAPER

Derwent Class: E33; F09

International Patent Class (Main): C01F-011/18; C09C-001/02

International Patent Class (Additional): D21H-017/67; D21H-021/28

File Segment: CPI

Manual Codes (CPI/A-N): E21-C02; E34-D03; F05-A06D

Chemical Fragment Codes (M3):

\*01\* A220 A940 C106 C108 C530 C730 C801 C802 C803 C805 C807 M411 M720 M903 M904 M910 N422 Q324 Q333 Q606 R01278-P

Chemical Fragment Codes (M4):

\*02\* K0 K5 K534 K599 M417 M781 M903 M904 Q324 Q606 W003 W030 W115 W120 W130 W336 9122-B8201-U

Derwent Registry Numbers: 1278-P

Specific Compound Numbers: R01278-P

Generic Compound Numbers: 9122-B8201-U

14/9/8 (Item 6 from file: 351)

DIALOG(R)File 351:DERWENT WPI

(c)1999 Derwent Info Ltd. All rts. reserv.

008175688

WPI Acc No: 90-062689/199009

XRAM Acc No: C90-027241

**Coloured pptd. calcium carbonate for coloured paper filler - by passing carbon dioxide through aq. calcium hydroxide slurry and water soluble dye**

Patent Assignee: OJI PAPER CO (OJIP )

Number of Countries: 001 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Main IPC	Week
JP 2014813	A	19900118	JP 88160734	A	19880630		199009 B
JP 94002581	B2	19940112	JP 88160734	A	19880630	C01F-011/18	199405

Priority Applications (No Type Date): JP 88160734 A 19880630

Patent Details:

Patent	Kind	Lan	Pg	Filing Notes	Application	Patent
JP 2014813	A		5			
JP 94002581	B2			Based on		JP 2014813

Abstract (Basic): JP 2014813 A

Substance is prepd. by passing a gas contg. **carbon dioxide** through an aq. **slurry** contg. **calcium hydroxide** and a **water soluble dye**. Coloured paper contains the coloured **pptd . calcium carbonate** as a filler.

USE/ADVANTAGE - The ppte. has good water fastness. The colour difference between the front and the back of the paper becomes very small.

In an example, quick lime and water were mixed and stirred for 4 hours to slake quick lime, to which water was added to prepare an aq. **slurry of calcium hydroxide** . 10 litre of this slurry was put in a reaction vessel with a capacity of 22 litre, 1500 ppm (by wt.) yellow direct dye w.r.t. **calcium carbonate** to be **produced** was added and then **carbon dioxide** gas was passed from the bottom of the vessel through the slurry for carbonation. Yellow-coloured **pptd . calcium carbonate** **formed** was filtered, washed with **water** , dried at 105 deg.C and pulverised. The b-value of the powder measured with a colour-difference meter was 12.0.

0/0

Title Terms: COLOUR; PRECIPITATION; CALCIUM; CARBONATE; COLOUR; PAPER; FILL ; PASS; CARBON; DI; OXIDE; THROUGH; AQUEOUS; CALCIUM; HYDROXIDE; SLURRY; WATER; SOLUBLE; DYE

Derwent Class: E33; F09; G01

International Patent Class (Main): C01F-011/18

International Patent Class (Additional): D21H-017/67; D21H-021/28

File Segment: CPI

Manual Codes (CPI/A-N): E34-D03; F05-A06D; G01-A01

Chemical Fragment Codes (M3):

\*01\* A220 A940 C106 C108 C530 C730 C801 C802 C803 C805 C807 M411 M720  
M903 M904 M910 N243 N262 N341 N512 Q324 Q332 Q606 R01278-P

Derwent Registry Numbers: 1066-S; 1278-P; 1502-S

Specific Compound Numbers: R01278-P

14/9/9 (Item 7 from file: 351)

DIALOG(R) File 351:DERWENT WPI

(c)1999 Derwent Info Ltd. All rts. reserv.

004755796

WPI Acc No: 86-259137/198640

XRAM Acc No: C86-112023

**High-purity calcium carbonate prodn. - from calcium hydroxide suspension after dissolution with ammonium, hydrazinium or amine salt**

Patent Assignee: HOECHST AG (FARH )

Inventor: CREMER J; HOLZ J

Number of Countries: 009 Number of Patents: 004

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Main IPC	Week
DE 3510695	A	19860925	DE 3510695	A	19850323		198640 B

EP 197327 A 19861015 EP 86103125 A 19860308 198642  
 NO 8601130 A 19861020 198649  
 ES 8702301 A 19870316 ES 553264 A 19860321 198716

Priority Applications (No Type Date): DE 3510695 A 19850323  
 Cited Patents: 1.Jnl.Ref; A3...8748; DE 334014; FR 2298511; FR 2405903;  
 No-SR.Pub

Patent Details:

Patent	Kind	Lan	Pg	Filing	Notes	Application	Patent
DE 3510695	A		18				
EP 197327	A	G					

Designated States (Regional): AT DE FR GB IT NL SE

Abstract (Basic): DE 3510695 A

**Prodn .** of finely divided **CaCO3** is effected by (a) treating a Ca(OH)2 suspension with a NH4 hydrazinium or amine salt, (b) filtering the resulting Ca salt soln., (c) clarifying the soln. with active charcoal and sepg. the charcoal, (d) treating the **soln .** with CO2 to **ppte . CaCO3** , and (e) sepg. washing and drying the ppte..

USE/ADVANTAGE - The process allows CaCO3 of high purity and whiteness, e.g. useful in paints, paper, toothpastes, cosmetics and pharmaceutical prods., to be produced from crude Ca(OH)2 suspensions, esp. from acetylene prodn. by the carbide process. (18pp Dwg.No.0/0

Title Terms: HIGH; PURE; CALCIUM; CARBONATE; PRODUCE; CALCIUM; HYDROXIDE; SUSPENSION; AFTER; DISSOLVE; AMMONIUM; HYDRAZINIUM; AMINE; SALT

Derwent Class: B06; D21; E33; G01

International Patent Class (Additional): C01B-025/32; C01F-011/18

File Segment: CPI

Manual Codes (CPI/A-N): B05-A01B; B12-L02; B12-L03; D08-B01; D08-B08; E34-D03; G01-A01

Chemical Fragment Codes (M2):

\*01\* A220 A940 C106 C108 C530 C730 C801 C802 C803 C805 C807 M411 M720  
 M903 M910 N104 N164 N421 N422 N520 N521 N522 P911 Q254 Q324 Q332  
 Q333

Chemical Fragment Codes (M3):

\*01\* A220 A940 C106 C108 C530 C730 C801 C802 C803 C805 C807 M411 M720  
 M903 M910 N104 N164 N421 N422 N520 N521 N522 P911 Q254 Q324 Q332  
 Q333

Derwent Registry Numbers: 1066-S; 1208-S; 1278-P; 1502-S; 1648-S; 1947-S

14/9/10 (Item 8 from file: 351)

DIALOG(R) File 351:DERWENT WPI

(c)1999 Derwent Info Ltd. All rts. reserv.

004296520

WPI Acc No: 85-123398/198521

XRAM Acc No: C85-053574

**Calcium carbonate filler for plastics and rubbers - comprises phosphate-contg. calcitic particles**

Patent Assignee: WACKER CHEM GMBH (WACK )

Inventor: ECK H; HOPF H

Number of Countries: 009 Number of Patents: 006

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Main IPC	Week
DE 3339996	A	19850515	DE 3339996	A	19831104		198521 B
EP 143363	A	19850605	EP 84113279	A	19841105		198523
JP 60112615	A	19850619	JP 84228057	A	19841031		198531
EP 143363	B	19890906					198936
JP 89040768	B	19890831					198939
DE 3479648	G	19891012					198942

Priority Applications (No Type Date): DE 3339996 A 19831104

Cited Patents: A3...8724; DE 2716794; DE 2913613; No-SR.Pub

Patent Details:

Patent	Kind	Lan	Pg	Filing	Notes	Application	Patent
--------	------	-----	----	--------	-------	-------------	--------

DE 3339996 A 27  
EP 143363 A G  
Designated States (Regional): BE CH DE FR GB IT LI NL  
EP 143363 B E  
Designated States (Regional): BE CH DE FR GB IT LI NL

Abstract (Basic): DE 3339996 A

Novel calcitic **calcium carbonate** filler in the form of needles, fibres and/or rods has a BET specific surface of 15-200 sq. m./g., an average shape factor of greater than 5 and a phosphate content of 2.5-25% (calculated as PO<sub>4</sub> 3-) by wt. of calcium carbonate. A process for its prepn. is also claimed.

USE - The material is useful as a filler in plastics and esp. rubbers.

/12

Abstract (Equivalent): EP 143363 B

Calcitic calcium carbonate filler in needle, fibre and/or rod form having a specific BET surface area of 15-200 m<sup>2</sup>/g, an average shape factor of more than 5 and having a phosphate content of 2.5-25% by weight, calculated as PO<sub>4</sub>3- and based on **calcium carbonate**, and **prepared by precipitation** of an **aqueous** 3-25% strength by weight **calcium hydroxide suspension** using **carbon dioxide**, if appropriate mixed with air or nitrogen, at temperatures of from 0-25 deg. C, where 3-25% by weight, based on the calcium hydroxide employed, of PO<sub>4</sub>3- being added in the form of HaMe<sub>3</sub>-aPO<sub>4</sub>(A = 0-3; Me = H, NH<sub>4</sub><sup>+</sup> (a x O), Na<sup>+</sup>, or K<sup>+</sup>) before commencement of the pH decrease, thorough mixing being ensured during the entire reaction, and, if appropriate, the finished product, being dried and/or coated in a known manner.

Title Terms: CALCIUM; CARBONATE; FILL; PLASTICS; RUBBER; COMPRISE; PHOSPHATE; CONTAIN; CALCITE; PARTICLE

Derwent Class: A60; E33; G01

International Patent Class (Additional): C01F-011/18; C04B-014/28;

C08K-003/26; C08K-007/08; C09C-001/02

File Segment: CPI

Manual Codes (CPI/A-N): A08-R; E34-D03; G01-A01

Plasdoc Codes (KS): 0009 0037 0204 0222 0224 0042 0045 0060 0228 0402 0403

0404 1093 1095 1408 1409 1417 1994 2014 2022 2199 2202 2207 2215 2218

2319 3251 2729

Polymer Fragment Codes (PF):

\*001\* 014 03& 032 034 06- 074 075 09- 10& 104 105 117 122 15- 155 157 18-  
228 231 235 24- 250 27& 308 309 31- 310 311 342 360 44& 445 477 53&  
532 533 535 688 721 722 724 725

Chemical Fragment Codes (M3):

\*01\* A220 A940 C106 C108 C530 C730 C801 C802 C803 C805 C807 M411 M710  
M720 M903 M910 N422 N470 N511 N512 Q130 Q606 R032 R042

Derwent Registry Numbers: 0258-U; 0419-U; 0446-U; 0760-U; 1066-S; 1278-P;  
1278-U; 1502-S; 1520-U; 1688-U; 1711-U; 1714-U; 1892-U; 2001-U

14/9/11 (Item 9 from file: 351)

DIALOG(R) File 351:DERWENT WPI

(c)1999 Derwent Info Ltd. All rts. reserv.

000544555

WPI Acc No: 67-02057H/196800

**Magnesium containing fertiliser from sea water**

Patent Assignee: KUMAMOTO PREFECTURE (KUMA )

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Main IPC	Week
JP 68007818	B						196800 B

Priority Applications (No Type Date): JP 6544040 A 19650720

Abstract (Basic): JP 68007818 B

Process for the production of a magnesium fertiliser from the

byproduct in the preparation of magnesia clinker from sea water.

Fertiliser and soil conditioner.

Magnesia clinker is produced by treating sea water with a **slaked lime suspension** to precipitate  $\text{Mg}(\text{OH})_2$ . However, if the sea water contains **carbon dioxide** then the **product** also contains  **$\text{CaCO}_3$**  which effects its quality. In order to avoid this, enough slaked lime is added to remove the **carbon dioxide** as  **$\text{CaCO}_3$**  and leave most of the magnesium behind in **solution** for further treatment. The invention is concerned with the treatment of this **precipitate** which contains  **$\text{CaCO}_3$** , with an inorganic acid to give a **water** soluble magnesium containing fertiliser. If concentrated  $\text{H}_2\text{SO}_4$  is used the residue contains a mixture of  $\text{MgSO}_4$  and  $\text{MgO}$  in addition to  $\text{CaCO}_3$ ,  $\text{NaCl}$ ,  $\text{Fe}$  and  $\text{Al}$  compounds and silica.

Title Terms: MAGNESIUM; CONTAIN; FERTILISER; SEA; WATER

Derwent Class: C00

File Segment: CPI

Manual Codes (CPI/A-N): C05-A01B; C12-N08; C12-N09

Chemical Fragment Codes (M0):

\*01\* C540 C550 A212 A940 A950 A980 C720 C730 N000 P124 P126 P127 P111  
P112 R003 M411 M900

?

Set	Items	Description
S1	38452	(CALCIUM OR CA OR MONOCALCIUM) ( ) (CARBONATE OR CO3 OR MONOCARBONATE) OR CALCITE OR CaCO3 OR CARBONIC( )ACID( ) (CALCIUM OR -CA) ( )SALT OR CHALK
S2	11799	(CALCIUM OR CA) ( ) (HYDROXIDE OR OH2 OR HYDRATE OR DIHYDROXIDE) OR CAO2 OR (HYDRATE? OR SLAKE? OR MILK OR WATER OR H2O) (-N)LIME OR CARBOXIDE OR HYDRALIME
S3	75742	(CARBON OR C) ( ) (DIOXIDE OR O2 OR OXIDE) OR DRY( )ICE OR CARBONIC( )ACID( ) (ANHYDRIDE OR GAS) OR CARBONIC( )ANHYDRIDE OR CO2
S4	2785	S1(3N) (PRODUC? OR PROD? ? OR GENERAT? OR MANUF? OR MNFG? OR MFG? OR MFR? OR CREAT? OR FORM?? OR FORMING? OR FORMAT? OR MAKE? ? OR MADE? ? OR MAKING?)
S5	660	S1(3N) (SYNTHESI? OR PREPAR? OR PREP? ? OR PRPN?)
S6	1382	S1(3N) (PRECIPITAT? OR PPT OR PPT? ?)
S7	906	S2(3N) (SUSPENS? OR DISPERS? OR COLLOID? OR EMULS? OR MICRO-EMULS? OR SLURR?)
S8	386	S2(3N) SUSPEN?
S9	6335	S1(10N) (AQ? ? OR AQUEOUS OR WATER OR H2O OR LIQ OR LIQUID? OR SOLUTION? OR SOLN? ?)
S10	971116	MIX OR MIXE? ? OR MIXING OR BLEND? OR ADMIX? OR COMMIX? OR IMMIX? OR INTERMIX? OR DOPE? ? OR DOPING?
S11	11746	S10(3N) (SERIES OR MULTI OR MANY OR SEVERAL OR PLURALITY OR MULTITUD? OR MULTIPLE OR PLURIF? OR GROUP? OR SET OR NETWORK? OR SUCCESSION OR SEQUEN? OR CONSECUTIV?)
S12	131	S4-S5 AND S7-S8 AND S3
S13	20	S12 AND S6
S14	11	S13 AND S9
S15	0	S14 AND S11
S16	4	S4-S5 AND S11
S17	4	S16 NOT S14

?t17/9/all

17/9/1 (Item 1 from file: 347)  
 DIALOG(R) File 347:JAPIO  
 (c) 1999 JPO & JAPIO. All rts. reserv.

02450284  
 THERMAL RECORDING MATERIAL

PUB. NO.: 63-067184 [JP 63067184 A]  
 PUBLISHED: March 25, 1988 (19880325)  
 INVENTOR(s): IGARASHI AKIRA  
 APPLICANT(s): FUJI PHOTO FILM CO LTD [000520] (A Japanese Company or Corporation), JP (Japan)  
 APPL. NO.: 61-211313 [JP 86211313]  
 FILED: September 08, 1986 (19860908)  
 INTL CLASS: [4] B41M-005/18  
 JAPIO CLASS: 29.4 (PRECISION INSTRUMENTS -- Business Machines); 14.3 (ORGANIC CHEMISTRY -- Dyes)  
 JAPIO KEYWORD: R042 (CHEMISTRY -- Hydrophilic Plastics)  
 JOURNAL: Section: M, Section No. 728, Vol. 12, No. 289, Pg. 152, August 08, 1988 (19880808)

#### ABSTRACT

PURPOSE: To improve the whiteness and to prevent occurrence of fogging, by incorporating calcium carbonate which contains calcium hydroxide in a specific range into an intermediate layer placed between thermal recording layers and/or between the thermal recording layer and a supporting material.

CONSTITUTION: In a recording material, main components, i.e. coloring matter and developer, are dispersed respectively into particles smaller than **several** microns and **mixed**. In general, they are dispersed in a water soluble macromolecular aqueous solution such as polyvinyl alcohol and sensitizer is added. Thus produced mixture liquid of coloring matter and



developer dispersion liquid is added with calcium hydroxide. **Calcium carbonate** is **produced** through lime milk-carbon dioxide reaction, where the reacting conditions are selected such that non-reacting calcium hydroxide remains by 1-5% in **calcium carbonate**. Thus **produced calcium carbonate** suppresses reaction of acid such as coloring matter, exhibits high whiteness and retards occurrence of texture fogging. Sufficient pH regulating function is not achieved if the content of calcium hydroxide is less than 1% while the effect as dye is damaged if said content exceeds over 5%.

17/9/2 (Item 2 from file: 347)  
DIALOG(R) File 347:JAPIO  
(c) 1999 JPO & JAPIO. All rts. reserv.

01087924 \*\*Image available\*\*  
POLYBUTADIENE-MODIFIED EPOXY RESIN COMPOSITION

PUB. NO.: 58-025324 [JP 58025324 A]  
PUBLISHED: February 15, 1983 (19830215)  
INVENTOR(s): SATO YUKIO  
SUGIMURA MASAYOSHI  
KITAMURA MASAO  
APPLICANT(s): SURIIBONDO KK [400889] (A Japanese Company or Corporation),  
JP (Japan)  
APPL. NO.: 56-122416 [JP 81122416]  
FILED: August 06, 1981 (19810806)  
INTL CLASS: [3] C08G-059/34; C08G-059/18  
JAPIO CLASS: 14.2 (ORGANIC CHEMISTRY -- High Polymer Molecular Compounds)  
JAPIO KEYWORD: R047 (CHEMISTRY -- Liquid Rubber); R124 (CHEMISTRY -- Epoxy Resins)  
JOURNAL: Section: C, Section No. 164, Vol. 07, No. 100, Pg. 6, April 28, 1983 (19830428)

#### ABSTRACT

PURPOSE: A resin composition excellent in curability in an underwater or moistened condition and capable of forming cured products excellent in flexibility, comprising an epoxy-containing group-bearing 1,2-polybutadiene mixed with an inorganic filler and a curing agent for epoxy resins which contains an inorganic filler.

CONSTITUTION: A base agent obtained by adding an inorganic filler to a 1,2-polybutadiene having at least two epoxy-containing **groups** as terminals is **mixed** with a curing agent composition prepared by adding an inorganic filler to a curing agent for epoxy resins. As the 1,2-polybutadienes, those containing bisphenol-derived epoxy groups of formulae I, II etc., are preferred. As the inorganic filler, mention is **made** of portland cement, **calcium carbonate** or the like. As the curing agent, there is particularly preferred modified polyamideamine.

17/9/3 (Item 1 from file: 351)  
DIALOG(R) File 351:DERWENT WPI  
(c) 1999 Derwent Info Ltd. All rts. reserv.

009658023  
WPI Acc No: 93-351575/199344  
XRAM Acc No: C93-156004

**Extended hydraulic cements - using fine carbonate extenders with mineralised portland cement clinker providing superior strength**

Patent Assignee: AALBORG PORTLAND AS (AALB-N)  
Inventor: BORGHOLM H E; DAMTOFT J; DAMTOFT J S  
Number of Countries: 023 Number of Patents: 009  
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Main IPC	Week
WO 9321122	A1	19931028	WO 93DK132	A	19930413	C04B-007/02	199344 B

ZA 9302597	A	19931229	ZA 932597	A	19930413	C04B-000/00	199406
FI 9404793	A	19941012	WO 93DK132	A	19930413	C04B-000/00	199502
			FI 944793	A	19941012		
NO 9403854	A	19941118	WO 93DK132	A	19930413	C04B-007/02	199505
			NO 943854	A	19941012		
EP 640062	A1	19950301	EP 93911752	A	19930413	C04B-007/02	199513
			WO 93DK132	A	19930413		
EP 640062	B1	19960228	EP 93911752	A	19930413	C04B-007/02	199613
			WO 93DK132	A	19930413		
DE 69301658	E	19960404	DE 601658	A	19930413	C04B-007/02	199619
			EP 93911752	A	19930413		
			WO 93DK132	A	19930413		
ES 2086228	T3	19960616	EP 93911752	A	19930413	C04B-007/02	199631
US 5584926	A	19961217	WO 93DK132	A	19930413	C04B-007/02	199705
			US 95318718	A	19950104		

Priority Applications (No Type Date): DK 92495 A 19920413

Cited Patents: GB 2055786; US 4042408

#### Patent Details:

Patent	Kind	Lan	Pg	Filing	Notes	Application	Patent
WO 9321122	A1	E	43				
Designated States (National): CA FI NO PL US							
Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE							
ZA 9302597	A		45				
EP 640062	A1	E		Based on		WO 9321122	
Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE							
EP 640062	B1	E	28	Based on		WO 9321122	
Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE							
DE 69301658	E			Based on		EP 640062	
				Based on		WO 9321122	
ES 2086228	T3			Based on		EP 640062	
US 5584926	A		13	Based on		WO 9321122	

#### Abstract (Basic): WO 9321122 A

A cement compsn. consists of (i) 50-97 % wt. of Portland cement clinker with S content 0.5-10 % wt. as SO<sub>3</sub>, and F content 0.13-1.0 % wt. as F-; and (ii) 3-50 % wt. of an extender contg. carbonates of calcium, magnesium, or calcium magnesium carbonate, or mixts. of these as the main constituent and with median particle size (d<sub>50</sub>) below 14 microns.

Pref. the median particle size (d<sub>50</sub>) of the extender is below 12 microns, with increased preference below 10 or 6 or 4 or 3 microns. The extender is selected from carbonate-contg. rocks, minerals or synthetic cpds. such as calcite, aragonite, dolomite, limestone, dolostone, dolomite limestone, travertine, calcerenite, coquina, **chalk**, marble or industrial **prods**. The extender content is at least 50 % and pref. upto 80 % wt. Total content of C<sub>3</sub>S and C<sub>2</sub>S in the Portland cement clinker is at least 65 % and pref. at least 80 %, calculated according to Bogue and corrected for calcium sulphate in the clinker. The clinker sulphur content is pref. 1.3-10 % wt. expressed as SO<sub>3</sub> and fluorine content between 0.13-0.55 % as F-.

USE/ADVANTAGE = Relating to compsns. of extended hydraulic cements, i.e. cements which once **mixed** with water **set** and harden to give substantial strength, the use of fine carbonate-contg. extenders with mineralised Portland cement clinker provide greater strength development than with conventional Portland cement clinker.

Dwg.0/0

#### Abstract (Equivalent): EP 640062 B

A cement compsn. consists of (i) 50-97 % wt. of Portland cement clinker with S content 0.5-10 % wt. as SO<sub>3</sub>, and F content 0.13-1.0 % wt. as F-; and (ii) 3-50 % wt. of an extender contg. carbonates of calcium, magnesium, or calcium magnesium carbonate, or mixts. of these as the main constituent and with median particle size (d<sub>50</sub>) below 14

microns.

Pref. the median particle size (d50) of the extender is below 12 microns, with increased preference below 10 or 6 or 4 or 3 microns. The extender is selected from carbonate-contg. rocks, minerals or synthetic cpds. such as calcite, aragonite, dolomite, limestone, dolomite limestone, travertine, **chalk**, marble or industrial **prods**. The extender content is at least 50 % and pref. upto 80 % wt. Total content of C3S and C2S in the Portland cement clinker is at least 65 % and pref. at least 80 %, calculated according to Bogue and corrected for calcium sulphate in the clinker. The clinker sulphur content is pref. 1.3-10 % wt. expressed as SO3 and fluorine content between 0.13-0.55 % as F-.

USE/ADVANTAGE - Relating to compsns. of extended hydraulic cements, i.e. cements which once **mixed** with water **set** and harden to give substantial strength, the use of fine carbonate-contg. extenders with mineralised Portland cement clinker provide greater strength development than with conventional Portland cement clinker.

EP-640062 A cement composition consisting essentially of a) from 50% to 97% by weight (calculated on the total composition) of a Portland cement clinker, the sulfur content of which is in the range of 0.5-10% by weight expressed as SO3, and the fluorine content of which is in the range of 0.13-1.00% by weight expressed as F-; and b) from 3% to 50% by weight (calculated on the total composition) of an extender containing a carbonate selected from calcium carbonate, magnesium carbonate and calcium magnesium carbonate, and mixtures thereof, as its main constituent and having a median article size (d50) of below 14 um.

(Dwg.0/0

Abstract (Equivalent): US 5584926 A

A cement compsn. comprises: (a) 50-97 wt.% (calculated on the total compsn.) of a Portland cement clinker, having a sulphur content of 0.5-10 wt.% expressed as SO3, and having a fluorine content of 0.13-1.00 wt.% expressed as F-; and (b) 3-50 wt.% (calculated on the total compsn.) of an extender contg. a carbonate selected from the gp. consisting of calcium carbonate, magnesium carbonate and/or calcium magnesium carbonate, as its main constituent and having a median particle size (d50) of below 14 mum.

Dwg.0/0

Title Terms: EXTEND; HYDRAULIC; CEMENT; FINE; CARBONATE; EXTEND; MINERALISE  
; PORTLAND; CEMENT; CLINKER; SUPERIOR; STRENGTH

Derwent Class: L02

International Patent Class (Main): C04B-000/00; C04B-007/02

International Patent Class (Additional): C04B-007/06; C04B-028/04

File Segment: CPI

Manual Codes (CPI/A-N): L02-D14B

17/9/4 (Item 2 from file: 351)

DIALOG(R)File 351:DERWENT WPI

(c)1999 Derwent Info Ltd. All rts. reserv.

003465119

WPI Acc No: 82-13063E/198207

**Reactors in chalk sediment prodn. - are parallel-coupled for exhaust gas catalytic flow and series-coupled for sediment flow**

Patent Assignee: TAMPELLA OY AB (TAMA )

Inventor: JUSSILA K; KILPINEN O; LAINE J

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Main IPC	Week
SE 8102715	A	19811130					198207 B

Priority Applications (No Type Date): FI 801408 A 19800430

Patent Details:

Patent	Kind	Lan	Pg	Filing Notes	Application	Patent
SE 8102715	A		14			

Abstract (Basic): SE 8102715 A

Method of making chalk sludge suitable for the mfr . of chalk (calcium carbonate ), using smoke is described. The sludge continuously flows through at least two consecutive mixing zones of which the first zone has a larger sludge volume than the second.

Used for the mfr . of chalk as used in paints and as a filler for paper. (Provisional Basic advised Week D51)

Title Terms: REACTOR; CHALK; SEDIMENT; PRODUCE; PARALLEL; COUPLE; EXHAUST; GAS; CATALYST; FLOW; SERIES; COUPLE; SEDIMENT; FLOW

Index Terms/Additional Words: PAINT; PAPER; FILL

Derwent Class: E33; F09; G01; G02

International Patent Class (Additional): C01F-011/18

File Segment: CPI

Manual Codes (CPI/A-N): E34-D03; F05-A06D; G01-A01

Chemical Fragment Codes (M3):

\*01\* A220 A940 C106 C108 C530 C730 C801 C802 C803 C805 C807 M411 M424  
M720 M740 M903 M910 N243 N341 Q324 Q333 Q606

Derwent Registry Numbers: 1066-S; 1278-P; 1502-S

?